

PART 5, VOL 2.

AUSTRALIAN ORCHIDS



Sarcochilus Divitiflorus.

BY R. D. FITZGERALD F.L.S.

With Preface to the present Part by the Hon. D^r Norton, M.L.C., F.L.S.

SYDNEY, N.S.W.

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PREFACE

TO PART 5, VOLUME 2.

THE late Robert David Fitzgerald, as he himself has stated, commenced to study the family of Orchids in the hope of adding as it were a single stone to the great pile constructed by the boldest speculator of the age (the late Charles Darwin) of whom he was a warm admirer, and in whose system he was a firm believer.

Being a keen observer and a most painstaking and conscientious investigator, he soon accumulated a vast mass of information with respect to the interesting class of plants which he had made his especial study; and, partly for his own amusement and partly for ulterior purposes, he not only made careful artistic drawings of all specimens which he could by any means procure, but with the greatest care delineated every important feature of each plant, in which work he was ably assisted by Mr. Arthur J. Stopps, of the Lands Department.

By devoting all his leisure to his favourite pursuit, his collection of drawings and the information which he had accumulated became so valuable that he was urged to place the same at the service of the New South Wales Government with the view of publication in the best manner possible; and, fortunately for the prestige of the Colony, his generous offer was accepted.

The first part of the proposed work was published by the Government Printer, in July, 1875, since which time the first volume, consisting of seven numbers, comprising about ten plates each, with descriptions and in many cases most interesting particulars, has been completed, and up to March, 1888, four parts of the second volume had been issued.

To the great grief of his friends and of the botanical world, Mr. Fitzgerald died on 12th August, 1892, leaving a large number of finished or partially finished drawings and some notes connected with them, but unfortunately these notes were in most cases only fragmentary, and in no case in a state fit for publication.

The work done being too valuable to be allowed to be lost, the Government consented to continue the publication as theretofore, and, a sum of money having been granted for that purpose, it was arranged that Mr. Stopps should transfer to stone such of the drawings as had not already been dealt with, and that Mr. Henry Deane, M.A., F.L.S., Engineer-in-Chief of Railways, who was no mean botanist and had devoted a large portion of his leisure to the study of the Orchidaceæ, was induced to undertake the duty of preparing the necessary letter-press, using such notes as had been left by Mr. Fitzgerald, and supplementing these from his own valuable experience and observations.

These duties, having been so far fulfilled in each case most conscientiously, have resulted in the issue of Part 5, Volume 2; and it is earnestly hoped that these gentlemen will not only not be discouraged by the difficulties which have continued to beset them, but that they will be able to utilize the whole of the drawings and notes left unpublished at the date of the lamented death of Mr. Fitzgerald.

Unfortunately much valuable information, which could only have been supplied by Mr. Fitzgerald himself, will be entirely lost; but, whatever falling off may be observed in the new number, it is hoped that every reasonable allowance will be made on account of the great difficulties under which all parties concerned in the publication have been compelled to labour.

JAMES NORTON.

**Genus Adelopetalum. (*Fitzgerald, in Journal of Botany for 1891,*
page 152.)**

SEPALS nearly equal, the lateral ones connate with a projection of the column. Petals absent. Labellum thick, attached to the basal projection of the column, near the end, entire and contracted into a claw, but not articulate. Column short-winged and toothed at the top, and with a gland-like enlargement just below the tooth. Anthers terminal, capping the pollen masses. Pollen masses 2, globular, cohering above a small rostellum but not connected with it. Flowers reversed, numerous, terminal on a filiform peduncle, which issues from below the pseudo-bulb. Small bracts at the bases of the pedicels, larger and leafy on the peduncle. Herbs with creeping rhizomes connecting one-leaved conical furrowed pseudo-bulbs.



From Naure and on Stone by RD Fitzgerald FLS

BOLBOPHYLLUM exiguum

ADELOPETALUM bracteatum

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No. 1000 2 20



Bulbophyllum exiguum. (F. von Mueller, in *Fragmenta II*, p. 72.)

CREeping rhizome, forming a carpet covering large masses of rock, or growing on the stems of trees. Pseudo-bulbs ovoid or nearly globular, fleshy, angular, and furrowed when fresh, very deeply rugose when dry, two to three lines in diameter. Leaves solitary on the pseudo-bulbs, oblong-linear, or lanceolate, contracted at the base, half-inch to one and a half inches long, the margins recurved, the midrib prominent underneath. Peduncles filiform, one to two inches long, bearing two to four flowers on short filiform pedicels. Sepals lanceolate two and a half lines long, the lateral ones dilated at the base into a short broad pouch. Petals scarcely half as long as the sepal. Labellum nearly as long as the sepals, linear, thick and channelled, tapering and slightly recurved towards the end.

This species is distributed along the Pacific slope and table-land of Eastern Australia, from the Mary River to the Clyde.

Baron von Mueller gives as synonyms *Dendrobium pygmaum*, Cunningham in Lindl. Bot. Reg. XXV, miscell. 33 (name only) not of Smith, and adds that *D. Coleyi*, Cunningham in Hooker's Companion to the Bot. Mag. II, 377, seems to be also this *Bulbophyllum*.

EXPLANATION OF PLATE.

Fig. 1. Front view of column. 2. Side view of same. 3. Labellum. 4. Bud. 5. General view of flower. 6. Labellum, from above. 7. Pollen masses. The above all enlarged. Fig. A. Showing matting together of the pseudo-bulbs.

Adelopetalum bracteatum. (Fitzgerald, in *Journal of Botany*, for 1891, page 152.)

Rhizome creeping, forming a mass. Pseudo-bulbs globular or conical, with six or seven vertical ridges, much marked after the leaves fall off. Leaves solitary on the pseudo-bulbs, oblong, channelled along the centre, thick, contracted at the base, three-quarters inch long by one-half inch wide. Peduncles filiform, from one and a half to two inches long, bearing eight to ten leafy bracts, irrespective of the bracts below the flowers, and about twelve flowers on short pedicels. Bracts on peduncle lanceolate, acute, transparent, colourless, two lines long, one line broad. Flowers reversed without spur, yellow-striped, and blotched with red. Lateral sepals broadly lanceolate-acuminate, three lines long united for one line. Dorsal sepal rather shorter. Labellum yellow, one line long, thick, hollowed above and thickened at the point, attached to the column near the end and above the junction of the sepals by a short claw. Column free for one line, adnate to the lateral sepals for one line. Wing of column having one tooth close to the anther, and below it a globular gland-like swelling (possibly abortive anthers). A small globular rostellum far back in the deeply sunk stigmatic chamber, below the overhanging pollinia. Pollen masses 2, globular, cohering, not furrowed.

Habitat, Tweed River, N.S.W. Flowers in December.

On page 17 of *Botany Bulletin*, No. 4, 1891, Mr. Bailey describes a plant which he names *Bulbophyllum bracteatum*, and adds the following note:—"My friend, Mr. R. D. Fitzgerald, to whom I sent after making the above description my only specimen that he might figure it in his illustrated monograph of the *Australian Orchids*, writes me that he considers this plant to be identical with his lately described *Adelopetalum bracteatum*, but according to his diagnosis of this new genus (a copy of which he has kindly sent me) the flowers are apetalous, while in my plant it will be seen I have described these organs; with regard to the pollen masses being reduced to two, Mr. Bentham mentions this being the case at times in plants of the genus *BULBOPHYLLUM*; as, however, I think the two plants may prove identical, I use the same word for the specific name, leaving botanists to adopt whichever genus they think fit."

EXPLANATION OF PLATE.

Fig. 1. Side view of flower. 2. Front view. 3. View from above. 4. Back view. 5. Flower stalk and raceme. 6. Side view of flower with one of the lateral sepals removed. 7. Column and labellum. 8. Pollen masses. 9. Front view of column. 10. Side view of same. 11. Labellum. 12. Labellum, showing attachment to claw of column. 13. End of projection of column showing spot to which the labellum is attached.

Genus *Cirrhopetalum*. (*Lindley*.)

DORSAL sepal free, short, lateral ones much longer, narrow or acuminate, adnate to the base of the column. Petals much shorter than the lateral sepals. Labellum contracted at the base, articulate at the foot of the column, entire or auriculate. Column erect, short, winged above, the wings produced into teeth or horns. Anther terminal without appendages, deciduous, pollen masses waxy, normally four in number, but collected into two cells so as to look like two.

Plants of the habit of *Bulbophyllum*.

This genus is not recognised by Baron F. von Mueller in his Systematic Census of Australian Plants, and the species description of which follows is there placed under the genus *Bulbophyllum*.



From Nature and on Stone by R.D. Hagerald FLS

BOLBOPHYLLUM *Bailei*
CIRRHOPETALUM *clavigerum*

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 No. 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100

Bolbophyllum Baileyi. (*F. von Mueller, in Fragmenta IX, p. 5.*)

RHIZOME creeping, often six feet long, about two lines thick, sending down numerous fibrous roots. Pseudo-bulbs or stems with a single articulation two-thirds to one and a third inch long, angular. Petiole scarcely more than half an inch long. Leaf ovate, thick, coriaceous, channelled, three to four inches long, and one and a half to two inches broad. Shining above. Peduncle one flowered, three lines long, with membranous bracts surrounding it, which are split on one side and ochreous in colour. Pedicels about two inches long, rather less than a line in thickness. Sepals two-thirds of an inch, almost membranous, spotted with purple on the outside, inside white, dorsal sepal lanceolate, lateral ones falcate, semi-lanceolate. Labellum arched, articulate on a curved process of the column. Similar in colour to the sepals and spotted and three lines long, channelled below, and obtuse at the end. Column, free part one and a half lines long, produced into an acute membranous tooth. Pollen masses entire. Approaches nearest to *B. Nematopodum* among indigenous species.

This species, according to Mr. Bailey, is common on rocks and trees about Rockingham and Trinity Bays, on the Bellenden Ker Ranges, also at Herberton, Q., flowering during summer only in November and December.

EXPLANATION OF PLATE.

Fig. 1. Side view of column with labellum attached. 2. Pollen masses. 3. View of labellum from above. 4. Side view of column with labellum attached. 5. Back and front views of column. 6. Anther, with pollen masses detached from column.

Cirrhopetalum clavigerum. (*Fitzgerald, in Journal of Botany, Vol. XXI, p. 204.*)

CREeping rhizomes in joints of about three or four lines, covered with long hairs, especially round the pseudo-bulbs, producing roots below the pseudo-bulbs and forming dense patches. Pseudo-bulbs conical, from about six lines to one inch six lines long, and about five lines to one inch broad, deeply ribbed and furrowed. Leaves thick, oblong, pedicellate, from three to six inches long, about one inch four lines broad; scape from six to eight inches, slender. Bracts lanceolate, leafy. Flowers six or seven in a horizontal half circle, on pedicels of ten lines, a few small acute bracts at their junction. Dorsal sepal hooded, acute, dull yellow, spotted in parts with purple, about four lines long and four broad, terminated in a clavate hair, about four lines long. Lateral sepals lingulate, united from about a quarter of their length nearly to the ends, about one inch and a half long and three lines broad, acute, yellowish. Petals lanceolate, ciliate, purplish. Labellum thick, lingulate, much curved, articulate on the basal projection of the column. Wings of the column recurved at the anther, acute.

Mr. Fitzgerald says in the note appended to the above description in the *Journal of Botany*:—"The *Cirrhopetalum* which comes nearest to this species, as far as I am aware, is *C. Thouarsii*, Lindley. *C. Clavigerum* was obtained at Cape York, Northern Australia, and flowers in January."

EXPLANATION OF PLATE.

Enlarged flower showing clearly all the parts.

Genus *Phaius*. (*Lourcero*.)

SEPALs and petals nearly equal, free, spreading. Labellum broad, produced into a spur at the base, erect and convolute round the column, entire or three-lobed and more or less spreading at the top. Column semi-cylindrical, elongated. Anther lid-like. Pollen masses 8, nearly equal, or 4 shorter, waxy, attached to the branches of a dichotomous caudicle, but no gland. Terrestrial herbs, the leafy stems short and thickened into pseudo-bulbs or almost stemless. Leaves large. Scapes radical, tall, erect, leafless except sheathing scales imbricate at the base, distant on the stem and passing into the bracts. Flowers large and showy. (B. Fl. A. Vol. VI, page 304.)

The genus is spread over tropical and subtropical Asia. There are two Australian species, *P. grandifolius* (Lour.) and *P. Bernaysii* (Rowl: Reichb). The latter however is considered by some botanists as only a variety of the former.





PHAJUS — grandifolius

Illustration of the *Phajus grandifolius*, N. & W. Allen, 1898.

Illustration by Henry L. Sargent

From *Illustrations of the Phajus*



Phaius grandifolius. (Loureiro.)

STEMS tufted, thickened into short pseudo-bulbs at the base, bearing two or more oblong or ovate-lanceolate leaves, often above one foot long, narrowed into a long petiole. Scapes radical, one to six feet high, bearing a loose raceme of large showy flowers. Sepals and petals, broadly lanceolate, one to two inches long, white outside, cinnamon brown inside. Labellum, nearly as long as the sepals, broadly ovate, very obtusely three-lobed or notched, the centre lobe shortly acute, the margins undulate, white, and shaded or streaked with crimson, loosely encircling the column at its base; the spur short, narrow, and curved. Column nearly three-fourths of an inch long, with a fringe of calli round its edge.

This species extends to the Malay Archipelago and China. In Australia it is found on the Hastings, Macleay, Richmond, and Tweed Rivers, and probably all rivers northward along the east coast, as well as the islands of Moreton Bay and others along the Queensland coast.

EXPLANATION OF PLATE.

Fig. 1. Column, enlarged with anther and pollen masses in position. 2. Column, with anther removed. 3. Pollen masses. 4. Capsules, one of which has been cut transversely. 5. Shows an abnormal form of the column, possessing a second and third stamen. For the benefit of readers who are not botanists it may be well to mention that all members of the natural order Orchideae, with the exception of *Cypripedium* and *Apostasia* (which latter however is sometimes placed in a separate natural order), possess normally one stamen only; the presence therefore of a second and third stamen in a more or less perfect state is extremely interesting.

Bentham, in the *Flora Australiensis*, Vol. VI, page 305, gives Robert Brown's name of *Blotia Tankervillei* as a synonym, but the figure given in the *Botanical Magazine* differs somewhat from the specimen under consideration. The labellum is, however, usually more crenulate than shown in the Plate now published. Baron von Mueller describes *P. australis* in his *Fragmenta* I, 42, and *P. leucophaeus* in *Fragmenta* IV, 163, but now only acknowledges one species, *P. grandifolius*.



From Nature and on Stone by R.D. Hagenfeld F.R.S.

PHAIUS Bernaysii

Printed at the Department of Science, London, E.C. 4.
1899
No. 1000



Phaius Bernaysii. (Rowl, Reichb. f. in Gard. Chron. 1873, 361.)

THIS species has the habit, stature, foliage, and inflorescence of *P. grandifolius*. The colour of the flowers is a pale yellow inside, the outside of the petals and sepals being white. If a comparison is made the spur of the labellum will be found to be straighter than in *P. grandifolius*. The edges of the labellum are strongly undulate and crisped, and the form of this part of the flower seems to be sufficiently marked to distinguish it from the typical *P. grandifolius*; the fringe at the apex of the column is not present as in that species.

The species has been met with on the Islands of Moreton Bay only.

Mr. F. M. Bailey, F.L.S., Colonial Botanist of Queensland, says, that in his opinion "this is a variety of *P. grandifolius*. Dr. Reichenbach took a similar view from an inspection of the specimens taken to Europe by Mr. L. A. Bernays, but placed it as a variety of *P. Blumei*. The flowers are not rightly distinguishable from those of *P. grandifolius* till they are expanded."

In the *Botanical Magazine* tabula, 6032, is an illustration of this orchid under the name of *Phaius Blumei* var *Bernaysii*, accompanied by a description by Dr. Hooker. Dr. Hooker expresses the doubt as to whether the form in question and *P. Blumei* were not mere varieties of *P. grandifolius*, and subjoins the following note:—"Dr. Reichenbach obligingly informs me that he has thus distinguished three of the species here below mentioned, 1. *P. grandifolius*, sepals and petals acute, tip or lip notched; spur short, thick. 2. *P. Blumei*, sepals and petals acuminate; tip or lip acute; spur short, thick. 3. *P. Wallichii*, spur longer, slender." He adds that they may be regarded as sub-species.

Whatever may be said of the comparative merits of the views expressed by such competent judges, there is no doubt that Mr. Fitzgerald was convinced of the specific difference of *P. grandifolius* and *P. Bernaysii*. The differences are well shown on the two plates illustrating them.

The same tendency of the column to produce second and third stamens as occurs in *P. grandifolius* is here existent and is shown in the plate. Reichenbach noticed this tendency and evidently refers to it when he uses the expression "columna subtriandra." Mr. Bailey states that he has noticed in some flowers the presence of a lateral sterile stamen.

EXPLANATION OF PLATE.

Figs. 1, 2, 3, 4, and 5. Various forms of columns. 6. Anthers.

Genus *Epipogum*. (*Gmelin.*)

SEPALS and petals free, nearly equal, narrow, erect or spreading. Labellum sessile, large, ovate, concave, with a short obtuse spur at the base. Column very short, margin membranous. Anther lid-like, with a large thick terminal appendage. Pollen masses two, granular, attached to the plant by long caudicles. Leafless terrestrial herbs with a thick and fleshy or branching and coral-like rhizome. Scapes simple, ascending or erect with a few scarious scales not green. Flowers white (or sometimes pink?) in a terminal raceme usually nodding or pendulous. (B. Fl. A. VI, p. 308.)

A genus containing few species but scattered over a great part of the old world.

Genus *Gastrodia*. (*R. Brown.*)

SEPALs and petals united in a five-lobed tube or cup, gibbous at the base under the labellum. Labellum shorter than the perianth, shortly adnate to it at the base along the centre, entire or with two obtuse auricles near the base, oblong, the margins undulate, the disk with two longitudinal raised lines or plates confluent upwards with a single one. Column elongated, the apex concave, with a membranous margin. Anther lid-like, incumbent, very shortly stipitate, deciduous, the cells contiguous. Pollen granular. Stigma on a short protuberance at base of column. Herbs parasitical on roots, leafless and not green. Scapes simple, erect with short loosely sheathing scales. Flowers white in a terminal raceme. (B. Fl. A. VI, page 308.)

This genus is represented not only in Australia but in New Zealand, the Indian Archipelago and East India.



From Nature and on Stone by R.D. Fitzgerald. F.L.S.

EPIOGON *nutans*

GASTRODIA *sesamoides*

Printed at the Department of Lands Sydney, N.S.W.
Sep. 1931
R.D. Fitzgerald.



Epipogum nutans. (Lindley.)

TUBER oblong, one and a half inches to two inches long and about one inch thick, lying horizontally in the soil one or two inches below the surface. Stem hollow three to nine inches high, with a diameter of nearly half an inch, being fragile and white, with about four oblong ovate bracts below the flower, those subtending the flowers similar but smaller, all very thin. Flowers very numerous, crowded on the upper half of the stem, which portion before the flowers expand is bent down; nodding pedicels, very slender and short, scarcely two lines. Ovary with three almost winged angles, about three lines long. Sepals about one-half inch long, narrow lanceolate; the petals broader than the sepals but of equal length, all white and very delicate, the points connivent or slightly spreading. Labellum longer than the sepals and petals, broadly ovate, concave, entire or the margins slightly fringed, sessile with a spur from one to two lines long, very blunt and transparent, the disk with two rather distant and broad rows of papillae, white with pink spots. Column very short, appendage at the end of anther as large as the anther itself.

The specimen figured was received from Mr. F. M. Bailey, F.L.S., in November, 1889. The plant was first reported from the Tweed River. It has been found by the late Dr. H. Turner, Bishop of Grafton and Armidale, on the Richmond River, near Ballina, N.S.W., and by Mr. Wilcox, on the Clarence, N.S.W. Mr. F. M. Bailey found it, he says, "at the root of an old Lantana bush, Ithaca Creek, Q." It has also been found at Cairns, Q., where, Mr. Bailey says, the native name is Maapa. The range of the species extends to East India and tropical Africa.

The plate shows a young plant of which a few flowers only are well developed. As the plant matures the stem becomes erect and elongated.

EXPLANATION OF PLATE.

Fig. 1. Side view of flower. 2. Apex of column. 3. Side view of column and spur, the blade of the labellum removed. 4. Side view of column and spur, but showing the blade of the labellum embracing the column. 5. Front view of column with anther. 6. Side view of column with anther. 7. View of column with anther, from above. 8. Pollen masses and appendages. 9. Side view of blade of labellum. 10. Top view of blade of labellum.

Gastrodia sesamoides. (R. Brown, in *Prod.* 330.)

STEMS one to one and a half feet high, the sheathing scales loose and very obtuse and shortly acute, two to three lines long, approximate at the base of the stem, distant higher up. Raceme erect, usually one to four inches long but sometimes much longer. Bracts scarious, very broad and obtuse, shorter than the pedicels. Flowers white or brownish outside, on pedicels of two or three lines. Perianth varying from six to eight lines long, lobes short and broad. Labellum scarcely shorter than the perianth, broadly oblong, very obtuse, much undulate. Column nearly as long as the labellum, angular, the basal stigmatic protuberance very prominent. Capsule obovoid-turbinate. (B. Fl. A. VI, page 309.)

This species is endemic in Australia and is found in Queensland, the coast district and table-land of New South Wales, in Victoria, and Tasmania. In the first-named colony the only locality where it is known to grow is in the neighbourhood of Brisbane. On the North Shore of Sydney Harbour it flowers in October, and it has been found in flower at the Fox Ground, Lane Cove, in November.

EXPLANATION OF PLATE.

Fig. 1. View of flower from above. 2. View of flower from below. 3. View of labellum from above. 4. Side view of labellum and column. 5. Front view of column, showing anther with pollen masses in place. 6. Apex of column with anther removed.



From Nature and on Stone by R.D. Fitzgerald. FLS

congesta

CALADENIA
unita

reptans

Printed at the Department of Lands, Sydney, N.S.W.
By
G. H. R. S.

Caladenia congesta. (*R. Brown, Prod., 324.*)

A SLENDER glandular pubescent or nearly glabrous species, allied to *C. carneae* but easily distinguished by the labellum. Stem nine inches to one foot high. Leaf narrow-linear. Flowers one or two, pink. Sepals and petals narrow-lanceolate, acute, one-half to three quarters of an inch long, the dorsal sepal erect incurved and concave. Labellum fully half as long as the sepals, narrow, contracted into a claw, three-lobed; the lateral lobes erect, incurved, and rather long; the middle lobe longer, narrow-lanceolate, recurved, densely covered with thick obtuse calli, either sessile or the lower ones somewhat contracted at the base. (B. Fl. A. VI, page 387.)

This species has been reported from various localities in Tasmania, some few places in Victoria, as well as New South Wales. The specimen from which the plate is taken was found by Mr. Sheaffe, at Bowral, in the month of November.

There is a figure by Archer in Hooker's Flora of Tasmania, II, 30, tabula 124.

EXPLANATION OF PLATE.

Fig. 1. Pollen masses. 2. Side view of column and labellum. 3. Some of the calli of the labellum. 4. Views of labellum from above and underneath. 5. View of column, back, front, and side.

Caladenia unita. (*Fitzgerald, in Gardeners' Chronicle for 1882, p. 461.*)

A HAIRY species from three inches to one foot high. Leaf linear, lanceolate, from three to six inches long. Flowers pink, hairy on the outside, two or three on long or short pedicels. Petals lanceolate, acute, contracted towards the base, reaching seven lines long. Dorsal sepal erect, hooded, shorter than the petals. Lateral sepals lanceolate, falcate, acute or obtuse, united from more than one-third to two-thirds of their length, reaching eight lines. Labellum about three lines on a long claw or contraction towards the base, the remainder of the labellum ovate, much recurved and fringed with numerous linear calli. Calli of disk linear in two converging lines, but united at the base into a plate. Column winged to the base, the wings produced into oblong lobes on each side of the stigma. Anther with a long narrow point. (This is the only *Caladenia* known to Mr. Fitzgerald in which the lateral sepals are united.) Western Australia.

EXPLANATION OF PLATE.

Fig. 1. Side view of column. 2. Front view of column. 3. Back view of column. 4. View of labellum looking outwards. 5. Side view of labellum and column.

Caladenia reptans. (*Lindley*)

A SMALL one-flowered species with apparently a creeping underground stem, in other respects closely resembling *C. latifolia*, of which it is perhaps a variety. Leaf oblong or lanceolate. Sepals and petals of *C. latifolia* or rather more obtuse; labellum contracted into a longer claw, deeply three-lobed, the middle lobe not fringed, the calli of the disk long and thick, more or less united to the base into two deeply lobed laminæ, forming two short converging rows placed in a semicircle or almost transverse. (B. Fl. A. VI, page 385.)

This is a West Australian species and was first reported from the Swan River. The specimen figured is from Mahogany Creek, W.A., and was in flower at the end of August.

EXPLANATION OF PLATE.

Fig. 1. Pollen masses. 2. Side view of column and labellum. 3. Top view of labellum. 4. Side view and front view of labellum. 5. Calli of labellum.





From Nature by R. D. Fitzinger FLS

On Stone by Arthur J. Stoppe

latifolia

CALADENIA

flava

Printed at the Surveyor General's Office Sydney N.S.W.
June 1889.
(40 of Lin. 0 254)



Caladenia latifolia. (*R. Brown, Prod., 324.*)

HAIRY, from one-half to one foot high. Leaf oblong-lanceolate, one and a half to four inches long. Flowers pink or rarely white, usually two or three, rather distant on short pedicels. Lateral sepals varying in different specimens, from six to eleven lines long, oblong-lanceolate, obtuse or scarcely ovate, the dorsal sepal rather shorter and more acute, the petals somewhat shorter and more lanceolate. Labellum not one-third the length of the sepals, shortly cuneate at the base, deeply three-lobed; the lateral lobes oblong, obtuse, and entire; the middle lobe longer, ovate or broadly lanceolate, fringed near the base with a few marginal calli; the calli of the disk linear, clavate, rather long in two short converging rows, sometimes almost forming a semicircle, sometimes rather longer and more parallel. Column shortly and rather broadly winged at the apex. Anthers with a long point. (B. Fl. A. VI, p. 384.)

This species has been reported from all the Southern parts of Australia from east to west. The specimen figured is from Western Australia, in which colony the plant was found flowering at Geraldton on August 4th, at Albany and Bunbury on September 23rd, and Marblup on September 30th.

EXPLANATION OF PLATE.

Fig. 1. View of labellum from base. 2. Column, front, back, and side views. 3. Front view of labellum. 4. Pollen masses. 5. Side view of labellum. 6. Calli of disk of labellum.

Caladenia flava. (*R. Brown, Prod., 324.*)

HAIRY, more glandular than most species and usually low, rarely attaining one foot, the underground stems very woolly and knotty. Leaf lanceolate, rather large for the plant. Flowers large, yellow, usually two to four or even five on a flexuose rachis. Sepals and petals broadly lanceolate, rather acute or almost acuminate, contracted at the base, the lateral sepals often above one inch long, with a somewhat darker middle line; dorsal sepal rather smaller, less yellow, with a more or less distinct reddish line or red blotches along the centre. Petals still shorter, pale yellow or whitish or more red in the centre. Labellum three to four lines long and broad with a very short broad concave claw, the broad lamina cordate at the base, deeply three-lobed, the lateral lobes ovate, shortly acuminate, the middle lobe rather longer and lanceolate, bordered on each side by two or three long linear clavate calli; calli of the disk linear clavate in two rows almost converging into a semicircle. Column winged from the base. Anther with a long point. (B. Fl. A. VI, page 384.)

This is a West Australian species; it was found by Mr. Fitzgerald flowering at Geraldton on August 4th, at Albany, September 25th, and at Marblup, September 30th, and by Baron von Mueller at Pinjarret.

EXPLANATION OF PLATE.

Fig. 1. Front view of column. 2. Side view of column and labellum. 3. View of labellum from above. 4. Side view of column.



brunonis

GLOSSODIA

intermedia

emarginata

Glossodia Brunonis. (Endlicher.)

A PUBESCENT or softly hairy plant of six inches to one foot, with one or two rather large blue flowers, much resembling *Caladenia gemmata*. Leaf narrow-lanceolate, one to three inches or more long, sometimes nearly glabrous. Sepals and petals one-half to three-quarters of an inch long. Labellum reduced to an irregularly lanceolate or almost linear lamina, often shorter than the column, entire, without calli on its disk, but at its base are two long thick linear obtuse calli often as long as the lamina, sometimes united at the base, erect against the column. Column half as long as the sepals, with a broad wing produced beyond the anther with a concave hood. Anther case pubescent, shortly acuminate. (B. Fl. A. VI, page 393.)

This is a West Australian species. It has been found at King George's Sound and adjoining districts, on the Swan River, at Bremer Bay and Galesbrook. It has been found flowering at Perth and Albany at the end of September.

EXPLANATION OF PLATE.

Fig. 1. View of back of column. 2. Attachment of calli at base of labellum. 3. Labellum with calli, from above. 4. Front view of column with labellum in position. 5. Side view of column with labellum in position. 6. Pollen masses.

Glossodia intermedia. (Fitzgerald, in Gard. Chron. for 1882, p. 462.)

A SLENDER pubescent species, about five or six inches high. Leaf oblong, sheathing at the base, two to three inches. One flowered, the outside of the flower pubescent. Sepals and petals about six lines, ovate-lanceolate, blunt, glossy, lilac purple. Labellum about four lines, linear, obtuse not emarginate, twice duplicate towards the end. A linear ridge on the centre of the disk. Calli at the base not as long as the labellum, linear, with two enlargements towards the end, column winged from the base and above the anther.

In this species the flower resembles *G. Brunonis*. The labellum is more like that of *G. emarginata* but is not emarginate; not simply duplicate as in *G. Brunonis* but twice duplicate as in *G. emarginata*. Calli at the base rather those of *G. emarginata* than of *G. Brunonis*. Column narrower than either in *G. Brunonis* or *G. emarginata*. It flowers later than *G. Brunonis*. Western Australia.

EXPLANATION OF PLATE.

Fig. 1. Side view of labellum with calli attached. 2. View of labellum from underneath and from above. 3. Pollen masses. 4. Side view of labellum and column, and front view of column. 5. Views of labellum from underneath and from above.

Glossodia emarginata. (Lindley.)

NEARLY allied to *G. Brunonis* with the same habit and foliage; the scape, however, more frequently one-flowered, the flower usually larger, not so blue in the dried state, and described by Oldfield as rose-coloured. Column with a hood-shaped wing extending beyond the anther as in that species. Labellum more developed, often exceeding the column, broadly oblong-linear, very obtuse or truncate and usually emarginate, the basal calli or appendages linear, slightly clavate, almost as long as the labellum. (B. Fl. A. VI, page 393.)

This is a West Australian species. It was found flowering at Albany in October. It was collected by Baron von Mueller as far north as Champion Bay. Other localities are the Swan, Vasse, Tone, Tweed, and Kalgan Rivers, Greenough Flats, and Lake Muir.

EXPLANATION OF PLATE.

Fig. 1. Side view of column and labellum. 2. Front view of column. 3. Views of labellum, from above and underneath. 4. View of labellum, with calli attached from above. 5. Pollen masses.



Drawn from Nature & in Colors by W. H. Fitzgerald F.L.S.

DENDROBIUM bigibbum

Printed at the Department of Lands Survey, N.S.W. [1883]



Dendrobium bigibbum. (Lindley.)

STEMS six inches or more long, slightly contracted towards the base, bearing in the upper part several lanceolate leaves of three or four inches. Raceme on a peduncle of six to eight inches with three to twelve large flowers of a deep lilac on pedicles of three-quarters to one inch. Sepals ovate or ovate-lanceolate, acute, three-quarters of an inch long or more and about five lines broad, the lateral ones produced with the basal projection of the column into an obtuse pouch, with a conical, straight, or curved obtuse spur on the lower side forming a double spur as in *D. dicuphum*. Petals broadly obovate almost orbicular, fully three-quarters of an inch broad. Labellum rather shorter than the sepals, with large lateral lobes forming the very broad base of *D. dicuphum*, but the middle lobe at least as broad as long, very obtuse and as long as the broad base, the disk with several raised divergent lines fringed or crested from the middle upwards.

The crested portion of the disk of the labellum is in some specimens white throughout, in other specimens the extreme end only is whitish. As regards the colour of the flower considerable variation appears to take place, so that whereas some specimens show the lilac colour of the drawing, others approach a bright purple, almost a rose colour, the brightness of which is again intensified in the labellum.

Captain Broomfield, who has successfully grown this orchid, and has received many from its native habitat, says that it commences to flower about the month of May after the wet season, and continues to flower for three or four months afterwards. Captain Broomfield further states that this orchid will stand more ill-treatment and neglect than any other tropical orchid he knows of; if put up in an attic for twelve months it retains its vitality; and if afterwards put into favourable conditions for growth it will shoot vigorously and as if it were refreshed after a long rest.

The plate shows the typical form of *D. bigibbum*, and the only locality known for this form is, according to Captain Broomfield, the Prince of Wales Island, Torres Straits, but allied forms, including *D. phalenopsis*, are found in Cape York Peninsula and the Islands of the Torres Straits.

EXPLANATION OF PLATE.

Fig. 1. View of glandular surface of labellum, from above. 2. Side view of column and labellum. 3. Front view of column. 4. Apex of column, showing anther and pollen masses in position. 5. Pollen masses.



South Australia (R. H. Macgregor, 1911)

abbreviata

DIURIS



South Australia (R. H. Macgregor, 1911)

tricolor

Diuris abbreviata. (F. von Mueller.)

HABIT rather more of *D. maculata* than of *D. pedunculata*, to both of which this species is allied. Leaves rather narrow. Flowers pale-coloured when dry, more or less blotched, usually several in a loose raceme, the pedicels long, and the rachis often remarkably flexuous. Petals oval-oblong, on very long slender claws; lateral sepals rather longer, narrow-linear and herbaceous; dorsal sepal scarcely so long as the labellum, erect and embracing the column at the base, oval-oblong and open in the upper part. Labellum three-lobed from above the base, the lateral lobes small, triangular or lanceolate, falcate; the middle lobe much longer, broad but much contracted at the base, the disk with two very prominent raised lines or plates ending a little beyond the base of the broad part of the middle lobe, quite smooth and glabrous. Lateral lobes of the column acute, entire, or denticulate; the wings continuous in front with the raised lines of the labellum. New England and the Darling Downs.

The name of this plant was chosen by Baron F. von Mueller in contrast to that of *D. elongata*, on account of the shortness of the lateral sepals. The species is not known in Victoria. Mr. A. G. Hamilton has collected it in the Mudjee district, N.S.W., where it grows among hills. It flowers there from the beginning of October to early in November. It is often fertilized, says Mr. Hamilton, by a folding back of the stigma to the pollen masses, in a similar manner to *Orthoceras strictum*.

EXPLANATION OF PLATE.

Fig. 1. Column. 2. Pollen masses. 3. Upper side of column, with anther. 4. Side view of labellum. 5. Under side of column, with stigmatic surface. 6. Back view of labellum. 7. Front view of labellum.

Diuris tricolor. (Fitzgerald, in *Journal of Botany*, 1885, p. 187.)

STEM, more than one foot high. Leaves, two, linear, channelled, four to six inches long. Bracts, two or more, sheathing. Flowers, six or more, yellow, with purple centre and purple claws to the petals, and with green lateral sepals. Lateral sepals from an inch to an inch and a half long, linear, deflexed. Dorsal sepal ovate, embracing the column, about half an inch long, yellow with purple centre. Labellum about four lines long, three-lobed, the lateral lobes three lines long, thick, truncate, oblong, the end denticulate, spotted with purple. Middle lobe yellow, obovate oblong, with two thick linear glands on the disk, approaching each other at both ends, half the length of the central lobe, smooth, spotted with purple. Wings of the column not longer than the column, and embracing it in the front as well as the sides, lanceolate, crenulate towards the end. Rostellum very large. Stigma cordate, with orbicular gland at the base as large as its rostellum. New South Wales.

The following is an extract of a letter received from Mr. A. G. Hamilton, who was the first to call Mr. Fitzgerald's attention to this species:—"I have personally collected *Diuris tricolor*, R. D. F., in the following localities in the Mudjee district; Guntawang, Gulgong, Cullenbore, Mulla muddy (on Big Hill), and Cooyal. Baron von Mueller wrote, on receipt of dried specimens from me, that he had had the plant from some part of Victoria. Mr. Fitzgerald, too, mentioned having received it from some other part of this Colony; I fancy Mr. Sheaffe was the collector. It is, so far as my experience goes, entirely a hill form, and not found on the flats below. It grew at Guntawang associated with *D. pedunculata*, *D. abbreviata*, and *D. elongata*. Height up to twenty inches, one to six flowers in a spike. It flowered from September 10th to October 17th, but I have taken a few as early as August 15th, and it sometimes lasted till November 1st. It usually seeded freely, and I have often found it to be fertilized by small pollen-eating beetles (*Hypocetrus globulus*, Mac., named from specimens I sent Sir William Macleay) which resort to the flowers to eat the pollen and rostellum, &c."

EXPLANATION OF PLATE.

Fig. 1. Side view of labellum. 2. Pollen masses. 3. Front view of labellum. 4. Side view of column. 5. Under side of column, with stigmatic surface. 7. Upper side of column, with anther.

Genus *Osyricera*. (*Blume, Bijdr 307 t. 58.*)

SEPALS spreading, nearly equal in length, the lateral ones united to the tip. Petals much smaller. Labellum articulated at the foot of the column, shorter than the sepals, hollowed or almost saecate close to the base, entire, the lamina with reflexed margins or convex, glandular on both sides and all over. Column erect, semicylindrical, the apex furnished with membranous bilid or trifid wings or projections, narrowed into a short stalk at the base. Anther terminal, lid-like, incumbent, convex, two-celled, the anterior surface suborbicular, glandular, with appendage, pollen masses two, waxy, solitary in each cell, ovoid, without appendage, free.

Epiphytcal herb (or growing on rocks) with unifoliate pseudobulbs. Leaf, linear lanceolate. Scape out of an erect rhizome, with a simple terminal spike, and sessile purple flowers.

The genus is closely allied to *Bulbophyllum*, but noted for the form of the labellum and the appendage to the anther, also for the union of the lateral sepals into one.

Hitherto only one species was known, namely, *O. crassifolia*, described by Blume.



(OSYRICERA) purpurascens

BOLBOPHYLLUM

lichenastrum

Osyricera purpurascens. (F. M. Bailey.)

THIS orchid was first described by Mr. F. M. Bailey, F.L.S., Colonial Botanist of Queensland, in the Proceedings of the Royal Society of Queensland for 1884, Part I, page 88, under the name of *Bulbophyllum purpurascens*. The genus *Bulbophyllum*, however, has the lateral sepals free, while in the plant in question they are completely united. This character led Mr. Deane to the conclusion that it belonged rather to the genus *Osyricera*, and he communicated to Mr. Bailey his views on the matter, at the same time suggesting that if he concurred he might like to make the necessary alteration under his own authority. Mr. Bailey, in his reply, agreed that in *Bulbophyllum* the sepals should be free, and adds:—"Bentham, in Journ. Linn. Soc., XVII, 300, says, '*Osyricera*, Blume, a single Javan species, only known to me from the Author's figure and description, is probably also very near *Bulbophyllum*, but distinguished by a curious appendage to the anther, and other minor characters.' The anther on my specimen is not quite perfect, yet it seems to agree pretty well with *Osyricera*, and I think it would be perfectly safe to place my plant in this latter genus, while at the same time the generic distinctions between *Bulbophyllum* and *Osyricera* are insufficient as at present known, in my opinion, yet, as I follow in all matters the *Genera Plantarum*, it seems to me that it would be as well for you to place the plant in the latter genus under your own or our joint authority."

The specific name has been adhered to according to custom, although not sufficiently distinctive for a member of the genus *Osyricera*, one of the characteristics of which is that the flowers are purple. The occurrence of a genus hitherto only known for Java is an interesting fact. Through the courtesy of the Director of the Government Botanic Gardens at Buitenzorg, Java, a copy of Blume's figure of his *Osyricera crassifolia* has been received, which, although representing a very distinct form from the one now figured, clearly shows a correspondence of structure entitling the two plants to be placed under the same genus.

The following is a description of the plant:—Rhizome creeping, forming dense matted patches. Pseudo-bulbs about one line long, often so close together as to give the rhizome a moniliform appearance, the scariosus sheathing scales prominent, leaves five to twelve lines long, deep green, thick, channeled above, the back convex, tapering at the base into a short stalk above the pseudo-bulb. Peduncles erect, numerous, filiform, six to twelve lines long, with several white scariosus bracts at the base and close under the solitary purplish flower. Lateral segments or sepals united to the tip, about two lines long, striate with three to seven dark lines, broad, lanceolate, obtuse, or the dorsal one emarginate, the oblique base adnate to the basal projection of the column, forming a short pouch; inner segments or petals purplish, about one and a quarter lines long, one-nerved, narrow lanceolate, point elongated and margin glandular ciliate. Labellum clawed, two lines long, dark purple, lanceolate with fringed margins, two-lobed at the base and a raised rib along the centre. Column white, short, the prominent wings ending in elongated points. Capsule oblong, ribbed, about three lines long and one and a half lines in diameter.

This pretty species was found growing on rocks between Herberton and Mourilyan Harbour, N.Q., by J. W. R. Stuart.

EXPLANATION OF PLATE.

Fig. 1. Pseudo-bulbs, with leaves attached. 2. Pollen masses. 3. Column, back view. 4. General view of flower. 5. Column, front view. 6. Anther. 7. Labellum, top view. 8. Labellum, side view, with column. 9. Base of peduncle. 10. View of column, labellum and lateral sepals which are in this genus united. 11. Side view of flower.

Bulbophyllum liehenastrum. (F. von Mueller, in *Fragmenta VII*, 60.)

CREeping rhizomes, forming very dense patches. Pseudo-bulbs reduced to a small scarcely prominent circular disk, surrounded by the long-fringed remains of the scariosus sheath. Leaves thick, fleshy, ovoid or almost globular, two to three lines in diameter, irregularly rugose when dry. Flowers very small, solitary on peduncles or scapes, two to three lines long, with one or two scariosus sheaths at their base and apparently articulate below the flower. Sepals ovate-lanceolate, about one line long, besides the spur, which is broad, obtuse, one and a half lines long. Petals lanceolate, very much narrower but not much shorter than the sepals. Labellum from the end of the basal projection of the column, with a narrow channeled erect claw, the lamina rather thick, obovate-oblong, obtuse, recurved, nearly as long as the sepals. (B. Fl. A. VI, 287.)

Habitat—On rocks and stones, Seaview Range, Rockingham Bay.

EXPLANATION OF PLATE.

Fig. 1. Front view of flower. 2. Labellum. 3. Side view of labellum. 4. Pollen masses. 5. Side view of column. 6. Side view of flower. 7. Front view of column.



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* Name proposed here to a genus in another family.